

**TRIP REPORT FOR THE
JOHN T. LEWIS SITE
SOIL SAMPLING EVENT
PHILADELPHIA, PENNSYLVANIA**

Prepared for

U.S. Environmental Protection Agency
1650 Arch Street
Philadelphia, PA 19103

Prepared by

Tetra Tech EM Inc.
7 Creek Parkway, Suite 700
Boothwyn, PA 19061

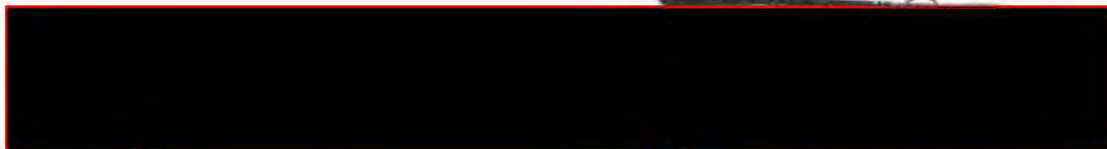
EPA Contract No. EP-S3-05-02

Technical Direction Document No. E33-024-08-09-005
Document Tracking No. 0757

June 30, 2009

Prepared by

Approved by

A large black rectangular redaction box covering the signatures of the Project Manager and START Site Assessment Manager.

Project Manager

START Site Assessment Manager

CONTENTS

<u>Section</u>	<u>Page</u>
1.0 INTRODUCTION	1
2.0 SITE BACKGROUND	1
3.0 INVESTIGATION ACTIVITIES.....	2
4.0 ANALYTICAL RESULTS SUMMARY AND CONCLUSIONS	4
5.0 REFERENCES	5

Appendices

- A FIGURES
- B LOGBOOK DOCUMENTATION

1.0 INTRODUCTION

Under Eastern Area Superfund Technical Assessment and Response Team (START) Contract No. EP-S3-05-02, Technical Direction Document (TDD) No. E33-024-08-09-005, U.S. Environmental Protection Agency (EPA) Region 3 tasked Tetra Tech EM Inc. (Tetra Tech), to conduct a site inspection (SI) under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) in support of site assessment activities conducted at the John T. Lewis site located at 2600 East Cumberland Street in Philadelphia, Pennsylvania, 19125. The data collected during the SI will be used to determine the need for additional assessment or response activities at the site or in the surrounding area.

This trip report provides site background information in Section 2.0, describes investigation activities in Section 3.0 and summarizes the analytical data and provides conclusions in Section 4.0. All references cited in this report are listed in Section 5.0. All figures are included in Appendix A and a copy of the logbook documentation is provided in Appendix B.

2.0 SITE BACKGROUND

Former potential lead smelter sites nationwide were identified in an April 2001 article published in the American Journal of Public Health by Eckel, and others (Eckel study) (Reference [Ref.] 1). The majority of these former potential lead smelters operated prior to 1964 and closed before the current environmental regulations were instituted. As part of the Eckel study, soil samples were collected from several of the identified former lead smelter properties. Results from the analysis of these soil samples indicated that concentrations of lead exceeded EPA's soil screening level for lead in residential soils. The results of the Eckel study indicate that the air disposition of lead into soils from former smelter operations may present an ongoing public health concern due to exposure of residential populations, especially children to soils containing elevated concentrations of lead (Refs. 1, 2, and 3). One of the sites identified in the Eckel study was the John T. Lewis site formerly located at 2600 East Cumberland Street in Philadelphia, Pennsylvania. Each former smelter property was given a number in Eckel's study. The Eckel study number for this site is 57 (Ref. 1).

The geographic coordinates of the former John T. Lewis facility are 39.9797° north latitude and 75.1181° west longitude on the Philadelphia and Camden, Pennsylvania – New Jersey Quadrangle, 7.5 minute series, United States Geological Survey topographic map (see Appendix A, Figure 1). The site is identified in EPA's Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) database as the John T. Lewis & Bros. site, CERCLIS ID Number PAN000306638 (Ref. 4).

Tetra Tech completed a windshield reconnaissance of the site and surrounding area on April 8, 2009. Several commercial restaurants, a bank, a convenience store/gasoline station, associated asphalt-paved parking areas and limited landscaped areas appeared to encompass the entire former smelter site. As a result of the site being completely developed with structures, asphalt-paved and limited landscaped areas, potential soil sample collection locations were not identified on the former smelter site. The property is located in a mixed land use area consisting of residential and commercial properties. Based on the close proximity to the former smelter site, Tetra Tech recommended a soil sampling event be conducted at the adjacent residential properties.

3.0 INVESTIGATION ACTIVITIES

On June 10, 2009, Tetra Tech collected ex situ soil samples from four residential properties situated within close proximity to the smelter. Ex situ samples were collected from a side yard adjacent and to the north of the [REDACTED] East Sergeant Street residence, the side yard and rear yard of the [REDACTED] East Firth Street residence, the rear yards of the [REDACTED] and [REDACTED] East Firth Street residences and the rear yard of the [REDACTED] East Cumberland Street residence (see Appendix B, Logbook Documentation). The samples were analyzed for lead concentration using a Niton model XLt portable x-ray fluorescence (XRF) analyzer, calibrated to analyze bulk soil samples using a cadmium₁₀₉ radioactive source. XRF analysis was performed in accordance with EPA Emergency Response Team (ERT) Standard Operating Procedure (SOP) No. 1707, "X-MET 880 Field Portable X-Ray Fluorescence Operating Procedures" (Ref. 5). The samples were collected from 0 to 6 inches below the ground surface. Each sample was placed in a plastic bag and transported to the Tetra Tech Boothwyn office for XRF sample preparation and analysis.

The ex situ sample preparation steps included:

- Placing a 50-gram aliquot of homogenized soil in a labeled baking cup
- Placing baking cup in oven for 2 hours at 350° F
- Screening the dried, 50-gram sample through a #10 mesh sieve (60 micron)
- Placing sieved sample in labeled XRF analysis cup
- Placing clean paper over sample in cup, place cotton ball over paper, and snap on the sample cup cover

Each XRF sample cup was placed into the portable XRF for analysis. Table 1 below summarizes the results, the sample locations are provided in Appendix A, Figure 3.

TABLE 1
XRF ANALYTICAL RESULTS SUMMARY

Sample ID	Location	Analyte	Result (ppm)
JTL-01	Side yard adjacent and to the north of the [REDACTED] East Sergeant Street residence	Lead	344.5
JTL-02	Side yard adjacent and to the north of the [REDACTED] East Sergeant Street residence	Lead	1,552.0
JTL-03	Side yard adjacent and to the north of the [REDACTED] East Sergeant Street residence	Lead	1,296.0
JTL-04	Side yard adjacent and to the north of the [REDACTED] East Sergeant Street residence	Lead	1,244.0
JTL-05	Side yard of the [REDACTED] East Firth Street residence	Lead	1,877.0
JTL-06	Side yard of the [REDACTED] East Firth Street residence	Lead	344.8
JTL-07	Side yard of the [REDACTED] East Firth Street residence	Lead	126.5
JTL-08	Rear yard of the [REDACTED] East Firth Street residence	Lead	2,364.0
JTL-09	Rear yard of the [REDACTED] East Firth Street residence	Lead	1,711.0
JTL-10	Rear yard of the [REDACTED] East Firth residence	Lead	1,777.0
JTL-11	Rear yard of the [REDACTED] East Firth residence	Lead	2,812.0
JTL-12	Rear yard of the [REDACTED] East Firth residence	Lead	2,939.0
JTL-13	Rear yard of the [REDACTED] East Firth residence	Lead	1,910.0
JTL-14	Rear yard of the [REDACTED] East Firth residence	Lead	2,345.0
JTL-15	Rear yard of the [REDACTED] East Cumberland Street residence	Lead	2,774.0
JTL-16	Rear yard of the [REDACTED] East Cumberland Street residence	Lead	2,689.0
JTL-17	Rear yard of the [REDACTED] East Cumberland Street residence	Lead	1,599.0

Notes:

ppm = parts per million

XRF = X-Ray Fluorescence

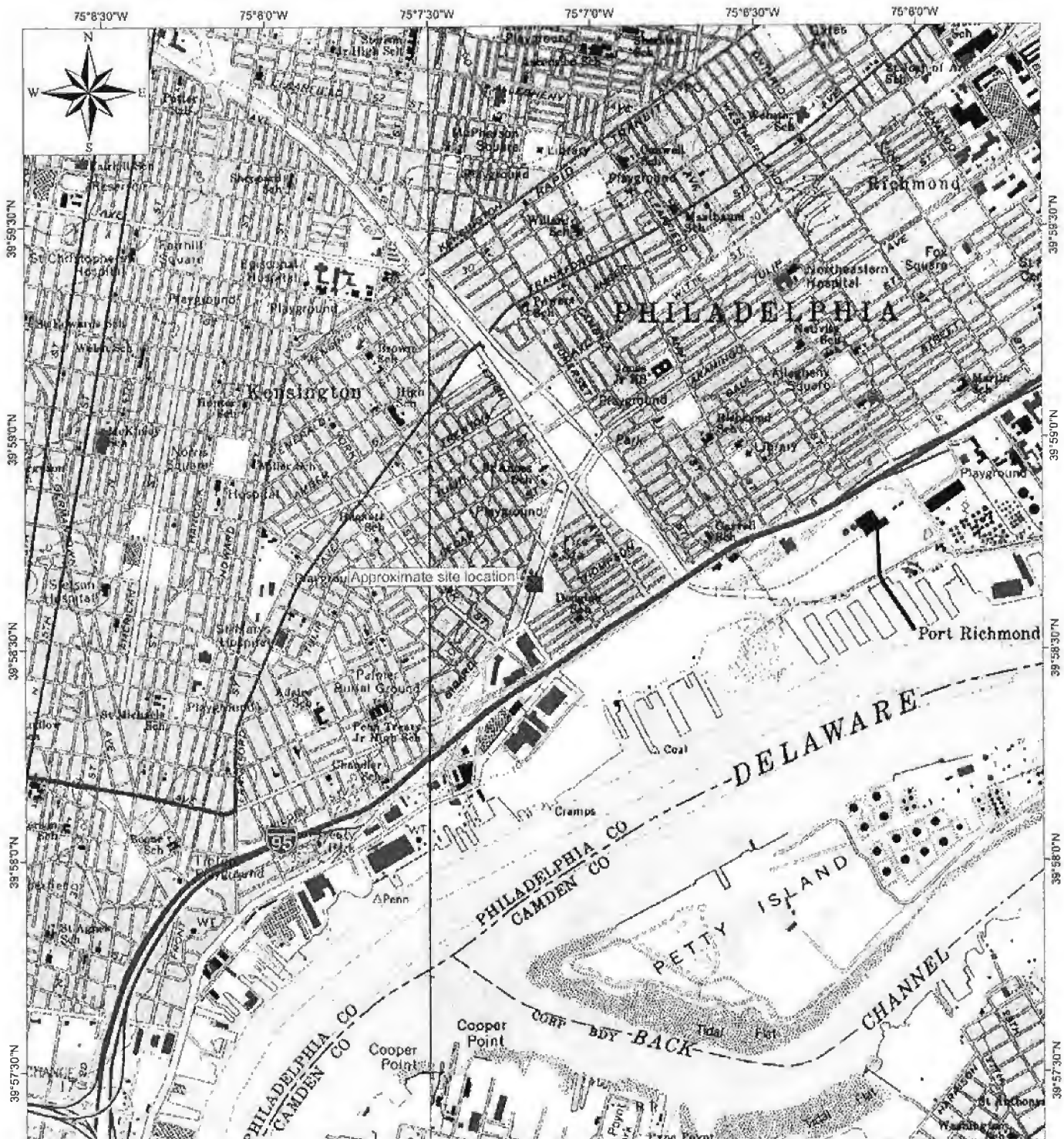
4.0 ANALYTICAL RESULTS SUMMARY AND CONCLUSIONS

EPA has established a soil screening level (SSL) for lead in residential soils (400 ppm) and industrial soils (800 ppm) (Ref. 6). The SSL can be used as a guidance level to identify sites that may pose potential risk and warrant additional assessment. The SSL established for residential soil of 400 ppm is a risk-based concentration calculated for a bare soil child's play area and the level established for industrial soil is the risk-based concentration for a non-play area (Ref. 7). As shown in Table 1, the lead concentrations recorded for ex situ samples JTL-01, JTL-06 and JTL-07 collected from nearby residential yards were below the residential soil (play area) and industrial soil (non-play area) SSLs. Lead concentrations recorded for the remaining 14 ex situ samples exceeded both the residential soil (play area) and the industrial soil (non-play area) SSLs, with a maximum concentration detected of 2,939.0 ppm.

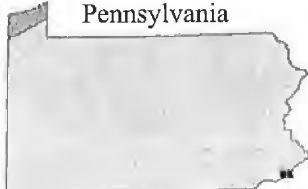
5.0 REFERENCES

1. Eckel, W.P., Rabinowitz, M.B., Foster, G.D. American Journal of Public Health. "Discovering Unrecognized Lead-Smelting Sites by Historical Methods". April 2001.
2. Pennsylvania Department of Health. Suspected Former Lead Smelter Sites: A Potential Risk Factor for Childhood Lead Poisoning. August 2004.
3. U.S. Environmental Protection Agency (EPA). Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities. OSWER Directive 9355.4-12. July 14, 1994.
4. U.S. EPA. Comprehensive Environmental Response, Compensation, and Liability Act Information System (CERCLIS) database. On-Line Address: <http://cfpub.epa.gov/supercpad/cursites/srchsites.cfm>
5. EPA. SOP 1707. "X-MET 880 Field Portable X-Ray Fluorescence Operating Procedures." ERT. Edison. December 1994.
6. EPA. Regional Screening Level Table Master April 2009. May 19, 2009. Available at: http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/Generic_Tables/pdf/master_sl_table_run_April2009.pdf
7. Agency for Toxic Substances & Disease Registry. Case Studies in Environmental Medicine (CSEM). "Lead Toxicity, What are the U.S. Standards for Lead Levels?". Available at: www.atsdr.cdc.gov/csem/lead/pb_standards2.html

APPENDIX A
FIGURES



Quadrangle Location = ■
Pennsylvania



John T. Lewis Bros. Site
Philadelphia, Pennsylvania

Figure 1
Site Location Map

TDD No. E33-024-08-09-005
EPA Contract No. EP-S3-05-02

Map created on June 26, 2009
by D. Call, Tetra Tech EM Inc.

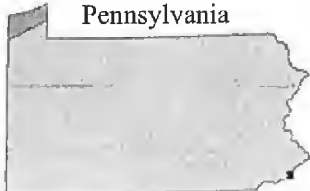




Source: Modified from USGS High Resolution State Orthoimagery for New Jersey, March 2007.

0 100 200
Feet

Approximate Site Location = ■
Pennsylvania



John T. Lewis Bros. Site
Philadelphia, Pennsylvania

Figure 2
Site Layout Map

TDD No. E33-024-08-09-005
EPA Contract No. EP-S3-05-02

Map created on June 26, 2009
by D. Call, Tetra Tech EM Inc.



APPENDIX B
LOGBOOK DOCUMENTATION

6-10-09 John T. Lewis Sr.
Wednesday, overcast, 75°F

[redacted] } Tetra Tech

1030 [redacted] arrive @ the St.

Anne's Senior Citizen Center
(2607 E Cumberland St.) -
meeting point in area of the
former John T. Lewis Lead
Smelter; [redacted] meet with

John Rajkowski - USEPA
Region III, WAM.

1040 [redacted] show WAM Rajkowski
the area formerly occupied by
the Lead Smelter & discuss
possible cause to sample for XRF
analysis.

1052 [redacted] WAM Rajkowski

walk to [redacted]
to senior center; vacant lot is
surrounded by chain-link fence
with signs posted regarding trespassing
& containing ownership phone #.
WAM Rajkowski calls owner #
in an attempt to obtain verbal
access to vacant lot.